II. List of Claims

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

1. (currently amended) A seat spring assembly comprising:

a frame having a first and a second frame end with first and second sides connected to the first and second transverse frame ends;

a plurality of flat leaf springs having leaf spring first ends connected to the first frame end and leaf spring second ends connected to the second frame end;

~~0-1 V arch and/or 0-3 W arches with at least~~ each leaf spring having one V ~~or W~~ arch adjacent the leaf spring first ~~or second~~ end and one W arch adjacent the leaf spring second end;

each leaf spring has a substantially flat center portion extending longitudinally and aligned horizontally to define a seating support surface;

a cross piece, said cross piece spanning and substantially perpendicularly interconnecting said leaf spring second ends, said leaf spring second ends being attached to said cross piece; and

a plurality of coil springs, said coil springs connecting said cross piece to said second frame end to transmit loads from said interconnected leaf springs through said coil springs ~~and second cross piece~~ to said second frame end.

2. (currently amended) The seat spring assembly of claim 1 wherein each leaf spring has

~~(a) no W arches and a V arch adjacent the leaf spring first end, and the leaf spring has said substantially flat portion bowed and extending between the V arch and the leaf spring second end; or~~

~~(b) no V arch and one W arch adjacent the leaf spring second end, and the leaf spring has said substantially flat portion bowed and extending between the W arch and the leaf spring first end; or~~

~~(c) a V arch adjacent the leaf spring first end and one W arch adjacent the leaf spring second end, and the leaf spring has~~ said substantially flat portion bowed and extending between the V and W arches; ~~or~~

~~(d) two W arches with one W arch adjacent the leaf spring first end and the other W arch adjacent the leaf spring second end, and the leaf spring has said substantially flat portion bowed and extending between the two W arches; or~~

~~(e) two W arches with one W arch adjacent the leaf spring second end and the other W arch between the one W arch and the leaf spring first end~~.

3. (Original) The seat spring assembly of claim 1 or 2 wherein there are 3-6 leaf springs for each seating position and a helper spring is attached to at least two of every 4 leaf springs, said helper spring being attached at one helper spring end between the first leaf spring end and the first frame end, and the helper spring other end extending below its respective leaf spring for a length less than the length of the leaf spring.

4. (Previously presented) The seat spring assembly of claim 1 or 11 wherein

the W arches when present have radii that permit the leaf spring to flex to extend the leaf spring and to accommodate twisting of the leaf springs.

5. (Previously presented) The seat spring assembly of claim 1, 2 or 11 wherein

there are 4 leaf springs for each seating position and the first and second sides of the frame are formed with a dropped center position between front and rear downwardly depending segments for clearance.

6. (Previously presented) The seat spring assembly of claim 1, 2 or 11 wherein

the frame is a U-shaped frame having first and second sides interconnected by said second end at the bottom of the U, and the first end crosses the opening on the U;

the leaf springs are formed and arranged to have one W arch located proximate the frame first second ends where the springs are joined to the cross piece, and/or a V or front W arch proximate the first leaf end; and

a said substantially flat, is slightly bowed and extends between said V or W arch and the opposite end of said leaf spring or between the V and W arch or between the first end and front W arches.

7. (Previously presented) The seat spring assembly of claim 1, 2 or 11 wherein a helper spring mounted in association with each of said leaf springs and said first end, said helper spring having a first leg sandwiched between the leaf spring and said first end and an angled second leg that projects inwardly, in the same direction as the axis of the leaf spring, and downwardly, so that as leaf spring flexes, the helper spring provides additional support and spreads the load on the leaf spring over a broader area than the point of contact with cross member that would occur in the absence of helper spring; and

adjacent rear downwardly depending mounting plates on each of said sides, said plates enabling mounting of the spring assembly to seat arms or for connection to mechanisms or seat backs.

8. (Previously presented) The seat spring assembly of claim 1, 2 or 11 wherein the coil springs are attached to each leaf spring end to provide a heavier duty spring unit.

9. (Previously presented) The seat spring assembly of claim 1, 2 or 11 wherein each W arch is formed and arranged with five formed radii that can flex to provide extension and accommodate twisting of said leaf springs which leaf springs are sufficiently wide to best follow the contour of the seat cushion for

maximum occupant seating comfort, and allow the flat leaf spring material to flex without setting up fatigue stresses at the ends of said leaf springs.

10. (Previously presented) The seat spring assembly of claim 1, 2 or 11 wherein:

the coil springs are generally disposed at the end of each leaf springs and in the spaces between the leaf springs;

helper springs are attached to each leaf spring between the first leaf spring end and the first frame end, and the helper springs extend below its respective leaf spring for a length less than the length of the leaf spring; and

each leaf spring has said substantially flat portion bowed.

11. (Currently amended) A seat spring assembly comprising:

a frame having a first and a second frame end with first and second sides connected to the first and second transverse frame ends;

a plurality of flat leaf springs having leaf spring first ends connected to the first frame end and leaf spring second ends connected to the second frame end;

each leaf spring having one V or W arch adjacent the leaf spring first or second end;

each leaf spring has a substantially flat center portion extending longitudinally and aligned horizontally to define a seating support surface;

a cross piece, said cross piece spanning and interconnecting said leaf spring second ends, said leaf spring second ends being attached to said cross piece; and

a plurality of coil springs, said coil springs connecting said cross piece to said second frame end to transmit loads from said leaf spring through said coil spring and second cross piece to said second frame end;

the leaf spring has said substantially flat portion bowed and extending between the V and W arches;

there are 3-6 leaf springs for each seating position and a helper spring is attached to at least two of every 4 leaf springs, said helper spring being attached at one helper spring end between the first leaf spring end and the first frame end, and the helper spring other end extending below its respective leaf spring for a length less than the length of the leaf spring.